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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,234	07/15/2005	Shirou Macda	2005_0752A	7412
513 7590 11/06/2007 WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			EXAMINER SCHLIENTZ, NATHAN W	
			ART UNIT 1616	PAPER NUMBER
			MAIL DATE 11/06/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,234	<b>Applicant(s)</b> MAEDA ET AL.	
	<b>Examiner</b> Nathan W. Schlientz	<b>Art Unit</b> 1616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/16/05 and 7/15/05</u> . | 6) <input type="checkbox"/> Other: _____  |

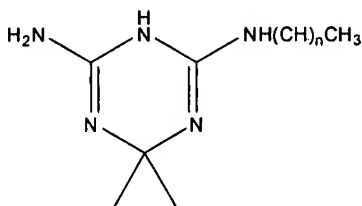
## DETAILED ACTION

### *Status of Claims*

Claims 1-13 were cancelled and claims 14-35 were newly added in a preliminary amendment filed 16 June 2005. As a result, claims 14-35 are pending and are examined herein on the merits for patentability. No claim is allowed at this time.

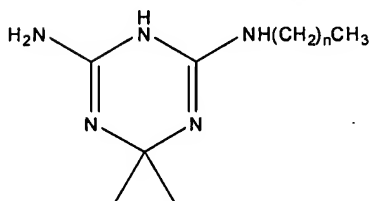
### *Claim Objections*

1. Claim 29 is objected to because of the following informalities: the structure



drawn is

, whereas the examiner believes Applicants intended



to claim

, wherein the substituents at the 4-N position is a fully

saturated alkyl with 13 to 15 carbons, as exemplified by Example 72 of the specification.

The unsaturated alkyl substituents, however, do not find support in the specification.

Appropriate correction is required. For the purposes of examination, the examiner

searched the fully saturated alkyl with 13 to 15 carbons.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 14-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, Claims 14, 18, 29, 31 and 33-35 recite, "general formula". However, it is recommended to replace the term "general formula" with the term "formula", because a general formula is indefinite with respect to the metes and bounds of the claims. The term general is defined as, "Not limited in scope, area, or application. Not limited to or dealing with one class of things; diversified." Therefore, it is not clear if the formulas are limited to the recited elements or encompass elements not recited.

2. Claims 14-20, 26 and 30-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, claims 14-20 and 31-32 recite, "optionally substituted". However, it is not clear what substituents are intended in the recitation of optionally substituted. Therefore, the metes and bounds of the instant claims are not clearly defined as to the extent of substitution intended by "optionally substituted". Claims 26, 30 and 33-35 depend from claims 14 and 18, and thus incorporate all the limitations of the claims for which they depend. Furthermore, claims 26, 30 and 33-35 do not clarify the recitation of

“optionally substituted”, and are thus indefinite as well. The examiner respectfully directs attention to instant claims 21-22, where Applicants have explicitly defined the substituents, thus clearly defining the metes and bounds of those claims.

### ***Claim Rejections - 35 USC § 102***

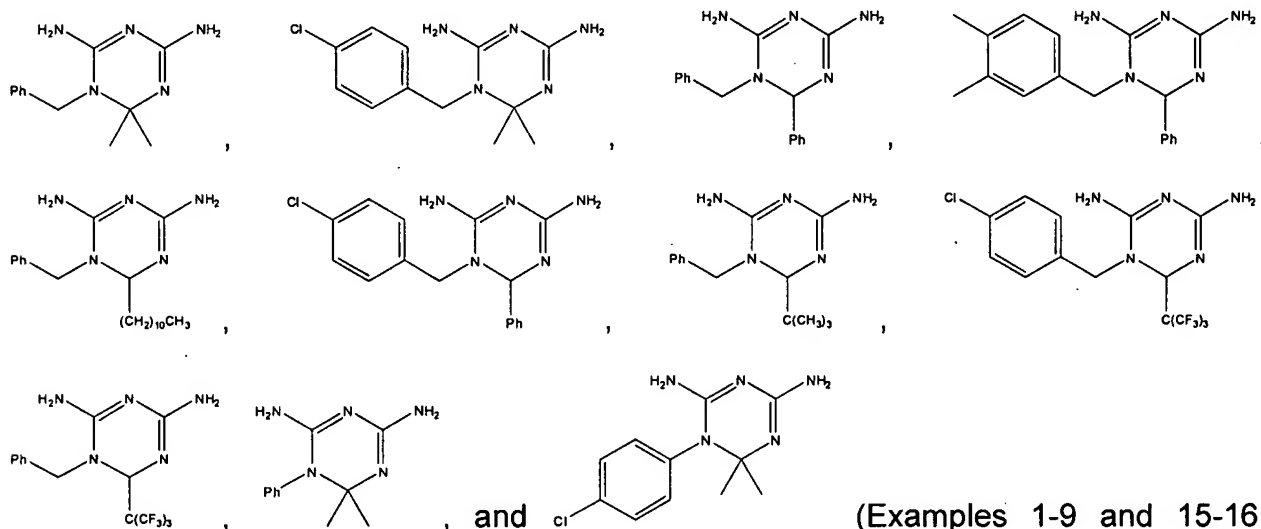
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

**A person shall be entitled to a patent unless –**

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 14-15 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,287,365 (hereinafter Newman '365).

Newman '365 disclose the compounds:

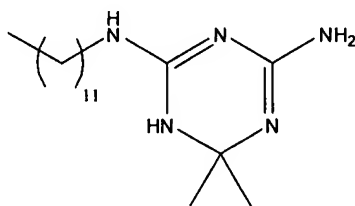


respectively). Newman '365 disclose that the compounds are effective herbicidal compounds (column 1, lines 10-14).

It is noted by the examiner that It is noted that the recitations of the intended use "external bactericidal/disinfectant" and "antiseptic/preservative agent for cosmetics" has not been given patentable weight to distinguish over the compounds of Newman '365 because the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Since Newman '365 disclose compounds that are the same as those claimed, they would be capable of performing the intended uses, as claimed.

2. Claims 14 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,287,366 (hereinafter Newman '366).

Newman '366 disclose the compound:

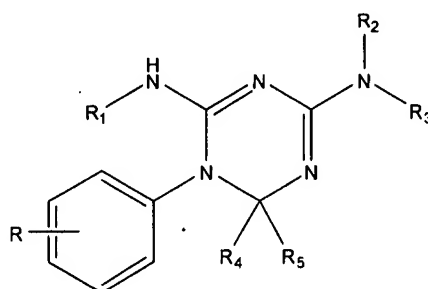


It is noted by the examiner that It is noted that the recitations of the intended use "external bactericidal/disinfectant" and "antiseptic/preservative agent for cosmetics" has not been given patentable weight to distinguish over the compounds of Newman '366 because the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the

claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Since Newman '366 disclose compounds that are the same as those claimed, they would be capable of performing the intended uses, as claimed.

3. Claims 14 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Modest et al., J. Org. Chem., 1956, 21(1): 14-20 (hereinafter Modest et al.).

Modest et al. disclose compounds of the formula:



wherein R<sub>1</sub>, R<sub>2</sub>, and R<sub>3</sub> each independently represent H or CH<sub>3</sub> (page 19, Table I).

It is noted by the examiner that It is noted that the recitations of the intended use "external bactericidal/disinfectant" and "antiseptic/preservative agent for cosmetics" has not been given patentable weight to distinguish over the compounds of Modest et al. because the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Since Modest et al. disclose

compounds that are the same as those claimed, they would be capable of performing the intended uses, as claimed.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1,148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

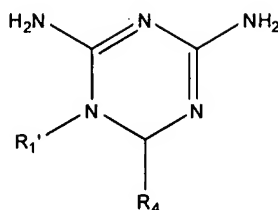
1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
- 
1. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Newman '365.

**Applicant claims:**

Applicants claim an external bactericidal/disinfectant agent of the formula:



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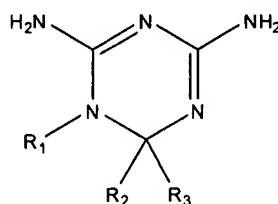


wherein  $R_{1'}$  is an optionally substituted phenyl and  $R_4$  is an alkyl with 7 to 16 carbon atoms.

***Determination of the scope and content of the prior art***

**(MPEP 2141.01)**

Newman '365 teach the compounds:



wherein  $R_1$  represents aralkyl and substituted aralkyl,  $R_2$  represents an alkyl, fluoroalkyl or phenyl radical, and  $R_3$  represents hydrogen or an alkyl substituents (column 1, lines 15-27).

***Ascertainment of the difference between the prior art and the claims***

**(MPEP 2141.02)**

Newman '365 do not explicitly teach a compound wherein  $R_1$  represents an optionally substituted phenyl,  $R_2$  represents an alkyl, and  $R_3$  represents hydrogen, as instantly claimed. However, Newman '365 teach explicit examples wherein  $R_1$

represents phenyl and chlorophenyl (Examples 15-16), R<sub>2</sub> represents undecyl (Example 5), and R<sub>3</sub> represents hydrogen (Examples 3-9). Newman '365 also teaches that the compounds may be prepared by a number of diverse processes (column 1, lines 28-29), and that 1-phenyl or *p*-chlorophenyl-s-triazines may be prepared in lieu of 1-benzyl-s-triazine by utilizing their methods (column 1, lines 52-54).

**Finding of *prima facie* obviousness**

**Rational and Motivation (MPEP 2142-43)**

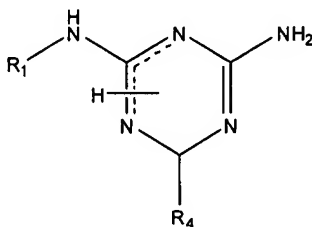
Therefore, it would have been *prima facie* obvious for one skilled in the art at the time of the invention to prepare compounds as taught by Newman '365 wherein R<sub>1</sub> represents phenyl or chlorophenyl, R<sub>2</sub> represents alkyl, especially undecyl, and R<sub>3</sub> represents hydrogen.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

2. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Newman '365, as applied to claim 17 above, in view of Carrington et al., Nature, 1951, 168: 1080 (hereinafter Carrington et al.), and Gilmour et al., Eur. J. Med. Chem., 1977, 12(6): 495-500 (hereinafter Gilmour et al.).

**Applicant claims:**

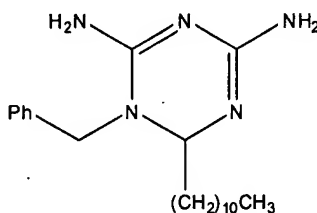
Applicants claim an external bactericidal/disinfectant agent of the formula:



wherein R<sub>1</sub> is an optionally substituted phenylalkyl and R<sub>4</sub> is an alkyl with 7 to 16 carbon atoms.

***Determination of the scope and content of the prior art***  
**(MPEP 2141.01)**

Newman '365 teach the compound:



***Ascertainment of the difference between the prior art and the claims***  
**(MPEP 2141.02)**

Newman '365 do not teach compounds wherein the benzyl substituent is at the 2-NH<sub>2</sub> position. However, Carrington et al. teach the easy conversion of *p*-chlorophenyl substituted at the N1 position to *p*-chlorophenyl substituted at the 4-NH<sub>2</sub> position (page 1080, 2<sup>nd</sup> column, lines 1-2). Also, Gilmour et al. teach the Dimroth rearrangement of dihydrotriazines on treating with alkali, acetylation, and acid solution at high temperatures (page 495, 2<sup>nd</sup> column, lines 1-15 without counting the figure).

**Finding of *prima facie* obviousness**

**Rational and Motivation (MPEP 2142-43)**

Therefore, it would have been *prima facie* obvious for one skilled in the art at the time of the invention to prepare a compound according to Newman '365 followed by the Dimroth rearrangement to obtain a compound wherein the benzyl substituents is on the 4-NH<sub>2</sub> position.

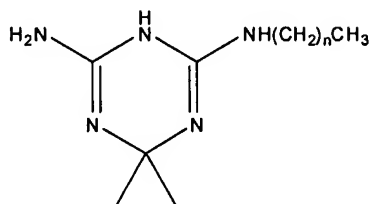
A *prima facie* case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. "An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (discussed in more detail below) and *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991). See MPEP 2144.09(I).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

3. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Newman '366.

**Applicant claims:**

Applicants claim a compound of the formula:

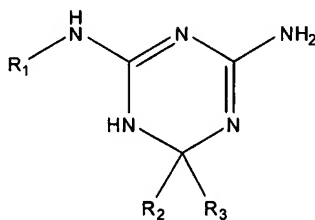


(wherein n represents an integer of 13 to 15), or a tautomer thereof or a salt thereof.

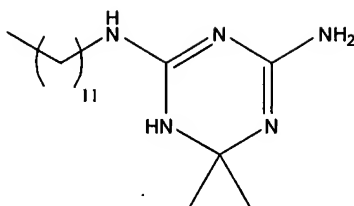
***Determination of the scope and content of the prior art***

**(MPEP 2141.01)**

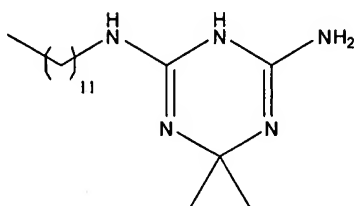
Newman '366 teaches the compound:



wherein  $\text{R}_1$  represents alkyl, alkoxy, aralkyl, nitro-substituted aralkyl, halo-substituted aralkyl or alkoxy-substituted aralkyl,  $\text{R}_2$  represents alkyl or aryl, and  $\text{R}_3$  represents hydrogen or alkyl (column 1, lines 10-29). Newman '366 explicitly teaches in the compound 4-amino-6-dodecylamino-1,2-dihydro-2,2-dimethyl-s-triazine (Example 3), shown below:



which is a tautomer of the compound:



***Ascertainment of the difference between the prior art and the claims***  
**(MPEP 2141.02)**

Newman '366 do not explicitly teach the R<sub>1</sub> position being represented by an alkyl with 13 to 15 carbons. However, dodecyl alkyl and tridecyl alkyl are merely structural homologs. Compounds which are position isomers (compounds having the same radicals in physically different positions on the same nucleus) or homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH<sub>2</sub>- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977). See also *In re May*, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978). See MPEP 2144.09(II).

**Finding of *prima facie* obviousness**

**Rational and Motivation (MPEP 2142-43)**

Therefore, it would have been *prima facie* obvious for one skilled in the art at the time of the invention to prepare a compound as taught by Newman '366, wherein the R<sub>1</sub>

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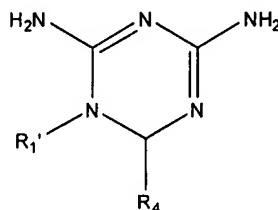
represents a C<sub>13</sub> alkyl because Newman '366 teaches R<sub>1</sub> represents an alkyl and specifically teaches an example wherein R<sub>1</sub> represents dodecyl; and tridecyl at R<sub>1</sub> is merely a structural homolog of the compound wherein R<sub>1</sub> represents a dodecyl.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

4. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Modest et al.

**Applicant claims:**

Applicants claim 15 is drawn to an agent according to claim 14 wherein any one of R<sub>2</sub> and R<sub>4</sub> is an optionally substituted alkyl group of 7 to 16 carbon atoms. Applicants claim 17 is drawn to an agent according to the formula:

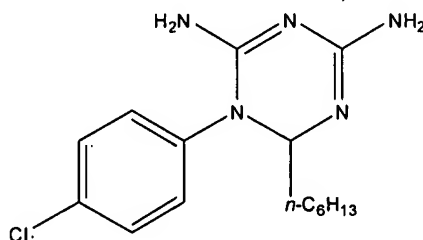


wherein R<sub>1</sub>' is an optionally substituted phenyl group and R<sub>4</sub> is an alkyl group of 7 to 16 carbon atoms.

***Determination of the scope and content of the prior art***

**(MPEP 2141.01)**

Modest et al. teach a compound of the formula:



(page 19, Table I, compound I-26).

***Ascertainment of the difference between the prior art and the claims***

**(MPEP 2141.02)**

Modest et al. do not teach a compound wherein the alkyl substituent has 7 to 16 carbon atoms. However, hexyl alkyl and heptyl alkyl are merely structural homologs. Compounds which are position isomers (compounds having the same radicals in physically different positions on the same nucleus) or homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH<sub>2</sub>- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977). See also *In re May*, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978). See MPEP 2144.09(II).

**Finding of *prima facie* obviousness**

**Rational and Motivation (MPEP 2142-43)**

Therefore, it would have been *prima facie* obvious for one skilled in the art at the time of the invention to prepare compounds according to Modest et al. wherein the R<sub>5</sub>



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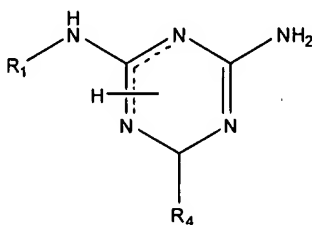
position represents an alkyl with 7 carbon atoms, because Modest et al. specifically teach an example wherein  $R_5$  represents hexyl; and heptyl at the  $R_5$  position is merely a structural homolog of the compound wherein  $R_5$  represents a hexyl.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Modest et al., as applied to claims 14-15 and 17 above, in view of Carrington et al., Nature, 1951, 168: 1080 (hereinafter Carrington et al.), and Gilmour et al., Eur. J. Med. Chem., 1977, 12(6): 495-500 (hereinafter Gilmour et al.).

**Applicant claims:**

Applicants claim an external bactericidal/disinfectant agent of the formula:

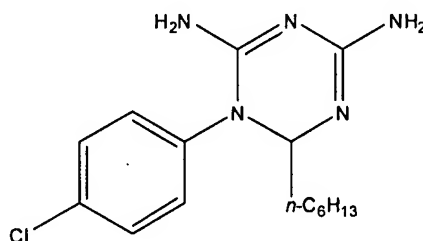


wherein  $R_1$  is an optionally substituted phenylalkyl and  $R_4$  is an alkyl with 7 to 16 carbon atoms.

***Determination of the scope and content of the prior art***

**(MPEP 2141.01)**

Modest et al. teach the compound:



***Ascertainment of the difference between the prior art and the claims***

**(MPEP 2141.02)**

Modest et al. do not teach compounds wherein the *p*-chlorophenyl substituent is at the 2-NH<sub>2</sub> position. However, Carrington et al. teach the easy conversion of *p*-chlorophenyl substituted at the N1 position to *p*-chlorophenyl substituted at the 4-NH<sub>2</sub> position (page 1080, 2<sup>nd</sup> column, lines 1-2). Also, Gilmour et al. teach the Dimroth rearrangement of dihydrotriazines on treating with alkali, acetylation, and acid solution at high temperatures (page 495, 2<sup>nd</sup> column, lines 1-15 without counting the figure).

***Finding of prima facie obviousness***

**Rational and Motivation (MPEP 2142-43)**

Therefore, it would have been *prima facie* obvious for one skilled in the art at the time of the invention to prepare a compound according to Modest et al. followed by the Dimroth rearrangement to obtain a compound wherein the *p*-chlorophenyl substituents is on the 2-NH<sub>2</sub> position.

A *prima facie* case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. "An obviousness rejection

based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (discussed in more detail below) and *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991). See MPEP 2144.09(I).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Schlientz whose telephone number is 571-272-9924. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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